

North Vietnamese Capabilities to  
Counter a US Course of Action  
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DIRECTORATE OF  
INTELLIGENCE

# Intelligence Memorandum

NORTH VIETNAMESE CAPABILITIES TO COUNTER A US COURSE  
OF ACTION

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CENTRAL INTELLIGENCE AGENCY  
Directorate of Intelligence  
6 October 1969

INTELLIGENCE MEMORANDUM

North Vietnamese Capability  
to Counter a US Course of Action

Introduction

This memorandum is responsive to a request for an analysis of the capabilities of the North Vietnamese to counter a US mining program by adopting countermeasures that insure continued access to North Vietnam by oceangoing and coastal shipping. The following assumptions are used in the analysis:

1. A US mining program has successfully denied access to North Vietnam's major and minor ports, and all feasible lightering areas, by both oceangoing and coastal shipping.

2. Both Communist China and the Soviet Union are committed to provide the equipment and personnel necessary for the implementation of the North Vietnamese countermeasures.

The focus of this memorandum is on the gross capabilities of North Vietnam to counter mining operations with indigenous resources or resources provided by the USSR and Communist China. The memorandum also considers the feasibility of more simple countermeasures such as resort to lightering, over-the-beach operations, and the use of shallow-draft coastal craft. The memorandum does not attempt to analyze the specific techniques and methods that might be used to sweep minefields.

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### The Mining Program

1. A successful mining of the water approaches to North Vietnam's major and minor ports and its coastal waters would require two general types of mines -- those designed to attack shallow-draft craft used for coastal shipping and on inland waterways, and mines designed to attack larger, oceangoing ships. At the present time, both types are available in the US munitions inventory. The first, the MK-36 destructor, is a magnetic device which has already seen use against waterborne traffic in the Vietnam war. Strictly speaking, this device is a land mine and has been used widely in that role. The MK-36 is too small to be an effective weapon against heavy steel-hulled ships, although it is effective against smaller wooden-hulled vessels. The second, the MK-50 mine, is an aircraft-planted bottom mine that is activated by the low frequency acoustic field of a ship. It is effective in water depths up to 60 feet and is particularly effective against ships of 60 to 1,000 tons displacement. One feature which makes it particularly invulnerable to neutralization is its delayed action arming device which can be set to delay from 10 minutes to as long as 90 days. North Vietnam has demonstrated a capability against the MK-36 but has not yet had to cope with the MK-50.

### The MK-36 Experience

2. The US experience during the Rolling Thunder program when the MK-36 was used against North Vietnam's waterborne traffic suggests that the weapon was not a very effective interdiction device. During the Rolling Thunder campaign, some 70,000 MK-36 weapons were deployed against land and waterway targets in North Vietnam. On balance, the MK-36's performance record seems very uneven. The monthly seedings of MK-36 weapons reached a high of almost 12,000 in May 1968. More MK-36 devices probably were dropped at the Quang Khe transshipment facility than at any other single mining target. Nevertheless, this facility demonstrated a sustained capability to handle large concentrations of watercraft during the periods of most intensive mining. While the destructor

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disrupted waterborne traffic in a number of instances and hampered the repair of damaged bridges, photographic evidence showed that the weapon failed to deny the North Vietnamese the use of any important waterway or land target for more than a brief time. The enemy demonstrated considerable ingenuity in countering the mine. Employing relatively simple measures such as floating rafts, barges, or sampans towing empty POL drums, the enemy was able to neutralize the mine fields, although at the price of some loss of life, watercraft, and cargo.

3. It is unlikely that the MK-36 alone could prevent the enemy's use of sampans and barges for lightering operations along the coast and on inland waterways. At best, such traffic would be hampered by an MK-36 mining program, and the enemy -- accepting the heightened risks -- would be required to invest time, effort, and some casualties to offset its effect. It is unlikely that either the USSR or Communist China would be required to assist North Vietnam in anti-mining operations against the type of threat represented by the MK-36.

#### Capabilities Against the MK-50

4. The approaches to the port of Haiphong are well suited for an MK-50 mining program. US navigation charts indicate a 25-mile stretch of channel which could be mined in the outer anchorage and well into the port itself. Furthermore, selective mining would be hydrographically feasible over a wide area in the vicinity of the port, thus making alternative approach routes hazardous.

#### *North Vietnam*

5. North Vietnam's naval inventory consists of three submarine chasers, 13 motor torpedo boats, 22 motor gunboats, and an estimated 50 service craft. None of these craft are capable of effectively sweeping bottom-influence mines such as the MK-50. Left to its own capabilities, North Vietnam would have only a few primitive options for coping with the mines. Machinegun fire into the mine case could be employed against mines laid in relatively shallow waters, but this method requires long

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periods of sustained fire and there is little chance of success. Dragging operations using trawler nets, steel barrels, and the like might be effective against shallow-positioned mines but would at best destroy only a few individual mines and would not neutralize the fields themselves. The use of underwater search teams is also possible, but the major ports of North Vietnam have bottom sediments, primarily mud and sand, which would make such measures exceedingly difficult.

*Communist China*

6. Acoustic minesweeping equipment has not been observed on Chinese ships, and the mine-sweeping capability of the Chinese is believed to be negligible against this type of mine. The Chinese could provide the North Vietnamese with trawler-type auxiliary minesweepers -- there are 40 to 50 of these craft in the South Seas Fleet, south of Taiwan. China also has hundreds of fishing trawlers in South China, including many in the Tonkin Gulf area. Finally, the South China Fleet has seven fleet minesweepers and four coastal minesweepers. Even if China were willing to transfer these units to North Vietnam, they would be most effective against the MK-36 weapons, not the MK-50. Once a decision was reached in Peking to provide minesweepers -- of whatever kind -- the units could be on station in North Vietnam within a few days. The Chinese would also have to provide the manpower to operate these units because North Vietnam lacks experienced seamen with the technical competence for such operations.

*USSR*

7. Mine warfare has long been an important part of Soviet naval strategy, and at the present time the USSR possesses the world's largest stock-pile of naval mines. Its current minesweeping capability is equally impressive, involving the use of almost 400 ships. The USSR has about 70 minesweepers at its Pacific Fleet naval bases, primarily in Vladivostok and Petropavlovsk. These ships are fitted to sweep acoustic mines, and it is possible that a number of these craft and their crews could be deployed into the upper Tonkin Gulf for use in sweeping North Vietnamese minefields within a week of the deployment decision.

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8. The effectiveness of a Soviet effort to clear the Haiphong channel and the time required for such an operation would depend on a number of factors. First, the characteristics of the MK-50 would have to be determined by the Soviets so as to make acoustic sweeping effective. With no prior knowledge specific enough for operational use, this could take several weeks, and possibly months. Second, the precise area to be swept would have to be determined. Finally, the ultimate size of the minesweeping force and its schedule of operations would be problems which could not be resolved until the first two were decided. According to a US minesweeping expert familiar with classified US munitions, the achievement of a given probability of clearing a mined area is a complicated and sophisticated science, and the results of minefield studies amount to only an educated guess or approximation. However, a minimum time frame can be set because of the delayed arming capability of the MK-50. A period of up to 90 days would be required in order to clear completely a heavily mined area -- by which time, of course, a new set of mines could have been implanted. It is quite possible that the enemy might conclude that the only practical method for clearing the coastal approaches to Haiphong within any reasonable time, say a few weeks, would be to employ unconventional methods such as dragging operations using trawler nets. While this might prove effective for limited areas in very shallow water, the degree of success over wide areas of water would be virtually nil.

#### Alternative Countermeasures

9. Facing up to the bleak prospect that minesweeping takes time and would be of questionable effectiveness, Hanoi would undoubtedly undertake an intensive search for means of bringing in supplies by alternate maritime means.\* One such possibility would be the use of lighters to offload ships in unmined offshore areas. Lightering has been used extensively in North Vietnam to speed up the offloading of ships in Haiphong port and to lighten ships before they enter the port to decrease their

\* *The supply channel represented by overland routes into North Vietnam would also almost certainly be greatly augmented.*

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draft. The North Vietnamese have sufficient watercraft to conduct extensive lightering operations -- a large portion of their inventory of river and lightering craft normally operates in the Red River delta region near Haiphong and would be readily available. The efficiency of such operations, however, would be affected by a number of factors such as the weather, the condition of the seas, and the location of relatively safe or suitable anchorages where merchant ships would be willing to drop anchor. On the average, the seas in the northern section of the Gulf of Tonkin are sufficiently calm to permit lightering operations some 60 to 70 percent of the time. The sheltered areas of the gulf near the Ile Ca Ba provide protection from rough seas, and, if not mined, would be the most suitable area for offloading operation.

10. The North Vietnamese might also attempt over-the-beach operations. Oceangoing ships could anchor south of the Red River delta and offload into lighters which could then move to southern river ports, estuaries, and beaches. Such operations would be quite inefficient and would be limited by difficulties in clearing cargo, particularly from the beach areas where, presumably, there would be only limited mechanized handling equipment -- at best truck-mounted or floating cranes. Nevertheless, this possibility cannot be dismissed out of hand. From Thanh Hoa south to the DMZ there are 27 beach areas that range from 500 yards to 38 miles in length. With a coordinated effort between lighters and inland craft or trucks, it would be possible to receive and move a large volume of goods, assuming no US bombing.

#### Conclusions

11. The North Vietnamese have demonstrated that they can cope with shallow magnetic mines of the type effective against small coastal and inland water craft, but the North Vietnamese themselves would be unable to counter the heavier acoustical mines effective against oceangoing ships. Both the USSR and Communist China possess minesweeping fleets, but China probably does not have a capability against acoustical mines. There are some 70 Soviet minesweepers in eastern waters which could be targeted against acoustical minefields.

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within a few weeks time, although it could easily take several months before the channels would be completely secure.

12. Under such circumstances, Hanoi would undoubtedly seek other means of resuming the flow of maritime imports. Lightering into unmined areas is one possibility; over-the-beach operations another. Neither of these techniques would be as efficient as normal freight-handling procedures, and both would be high-risk operations.

13. Hanoi's initial reaction to a US mining program would probably be to make some probes (high-risk and necessarily primitive) to test the minefields for weaknesses. With Soviet and/or Chinese help, a more systematic countermeasures program could be mounted within a few weeks. While such minesweeping operations might enjoy some limited success, Hanoi would probably soon determine that a sustained countering of a mining program directed against oceangoing ships would not be possible. Therefore, within the first 90 days (during which time North Vietnam's economic and military reserves would be adequate without any maritime resupply) an augmented overland supply program would probably be organized.

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